ENVIRONMENTAL REPORT OF PRINTING COMPANY ECOPRINT

Report by: Age Poom
Design and layout by: Epp Leesik
Printed: © Ecoprint

Environmental labels & certificates

green print
Printed by environmentally friendly printinghouse Ecoprint

441 799
Ecoprint

FSC
www.fsc.org
FSC® C092678
The mark of responsible forestry

PEFC™
PEFC/19-31-04
Promoting Sustainable Forest Management
www.pefc.org

EMAS
Verified environmental management
REG.NO. EE- 000003

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

Dear reader,

Another year has passed quickly and unnoticed and it is time to sum it up.
Businesswise, the year 2011 was successful for Ecoprint once again. We increased our turnover, raised the proportion of export sales and expanded the geographic range of our markets – our previous key target markets, Sweden and Norway were accompanied by Finland. Both the increased volume of orders and their average price speak of successful sales work. Along with this, we should express our gratitude to the production unit whose efficient operation has transformed the orders to neat printed matter.

However, economic success does not always equal success in environmental activities. So, how well did we do in 2011? We achieved several environmental goals and failed in others.
We measure two important indicators, which are calculated by adding up several small indicators, i.e. our ecological footprint and carbon footprint. We had set the goal of reducing both and succeeded in the latter, but failed in the former.

The main factor that increased our ecological footprint was waste generation as well as the growing volume of carriage of good resulting from export. In 2012, we will pay special attention to these two areas.

We are proud that we have managed to continuously reduce the consumption of electricity, water and thermal energy, which had a positive effect on the size of our carbon footprint.
We do not plan to apply for new ecolabels or to invest in environmental technologies in 2012, but will instead focus more on projects and events aimed at raising environmental awareness. As this report was prepared in 2012, it is worth mentioning that this year is a bit more festive for us than the previous one – we will celebrate the 10th Anniversary of Green Print and the completion of the 10th environmental report.

I do hope that with its longstanding commitment to environment, Ecoprint has also infected many others and thus we all have given our contribution to the development of the better environment.

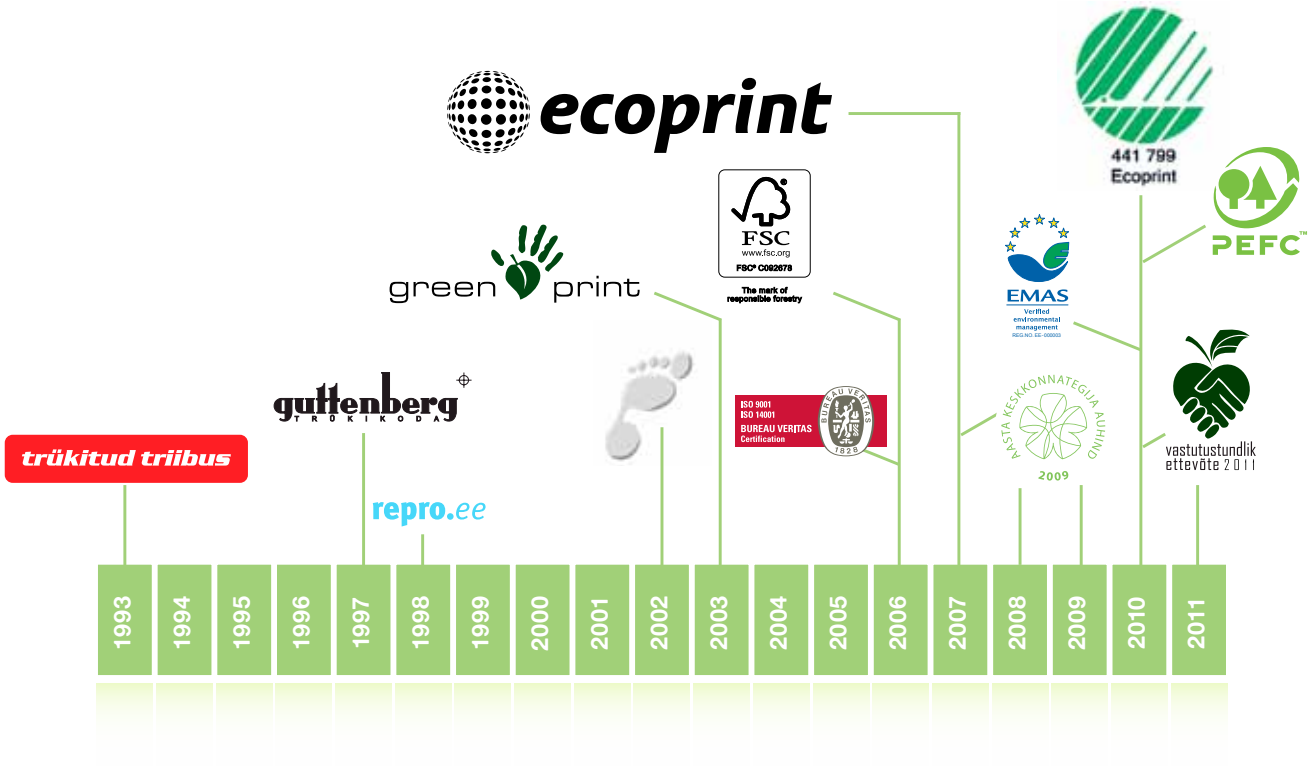
I would like to thank everyone who has contributed their ideas and efforts.
Wishing all of you great environmental actions,

Erika Ilisson
Member of the Management Board of AS Ecoprint

Contents

Introduction of Ecoprint AS

AS Ecoprint is an environmentally friendly printing company established in 2007. The company is located on the Vahi Industrial Estate near Tartu. The merger of Ecoprint with three well-known Estonian printing companies AS Triip, AS Guttenberg and OÜ Repro took place in 2008. The new organisation continued offering all of the services of the three companies. They include sales of printing services, prepress (incl. design) and offset printing.



The company produces printed materials of different shapes and formats: printed materials for companies, packaging and labels, pamphlets and brochures, books and periodicals. Ecoprint's market is mainly in Estonia, but the company has strongly expanded its activities on its export markets in Scandinavia in the last two years.

The company and the Estonian Fund for Nature developed a printing service that is unique in Estonia and represented by the patented trademark Green Print. When a customer orders a Green Print from Ecoprint, they may be certain that the harmful environmental impact of the printing service is smaller, because:

- the ink used for Green Prints is based on natural oils and resins instead of petrochemicals;
- environmentally certified or recycled raw materials are used for Green Prints;
- the production of Green Prints is supported by environmentally sustainable technology;
- all of the waste generated in the production of Green Prints is recycled.

This Environmental Report is the tenth consecutive public document for Ecoprint and its predecessor AS Triip, which describes the environmental activities and impact of the company. Data of the company's resource-efficiency and waste generation are presented in the report to characterise the environmental impact and evaluate the efficiency of the company's environmental activities, and they are analysed using the methods for measuring the ecological footprint and CO_2 emissions.

The MISSION OF ECOPRINT is to offer business clients optimal printing solutions that improve their competitiveness and reputation, and to develop the first environmentally friendly Green Print service on the Estonian market.

The COMPANY'S VISION is to be the most environmentally friendly printing partner in Estonia and on neighbouring markets. The reliability and client loyalty of Ecoprint are based on quality, contemporary values and environmental protection.

Company name	**AS Ecoprint**
Established on	**03.08.2007**
Address	**Savimäe 13, 60534 Vahi küla**
Website	**www.ecoprint.ee**
E-mail	**ecoprint@ecoprint.ee**
Telephone number	**+372 733 1400**
Mobile number	**+372 5 272 642**
Fax	**+372 733 1401**
Area of activity	**printing industry**
NACE/EMTAK code	**1812**
Turnover in 2011	**€ 2,560 million**
Number of employees in 2011	**38**
Territory of activities	**1400 m²**
Area under buildings	**4280 m²**

Main and production process

Ecoprint operates in one location, which is the Vahi Industrial Estate. In 2011, the company employed 38 people. The company's main process covers the entire printing service from sales and layout to the delivery of printed matter to consumers. Different support activities such as managing the company, maintaining certificates, marketing and general administration support the main process.

PROCESSES SUPPORTING THE OPERATIONS OF THE COMPANY

- Management's responsibilities
- Resource management
- The environment and certificates
- Internal and external communication
- Financial management

THE MAIN PROCESS OF AS ECOPRINT

CUSTOMER'S NEED FOR PRODUCT/SERVICE

SALES PROCESS
Identification of customer's wish
Preparation of offer
Confirmation of order

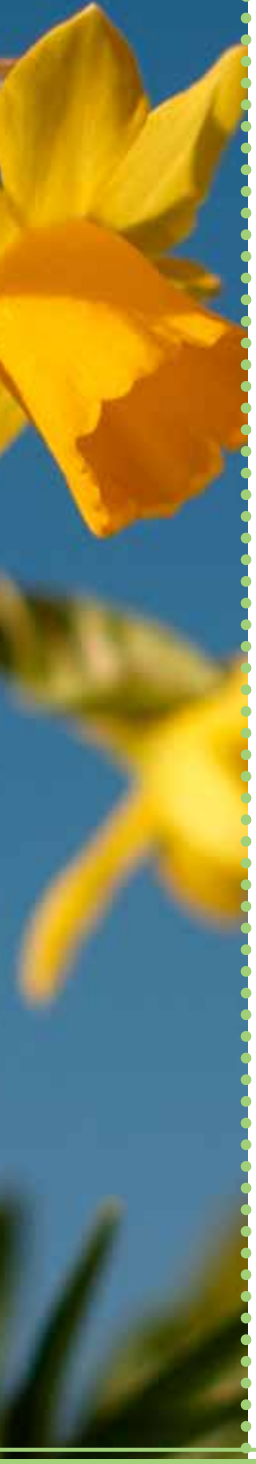
PRODUCTION PROCESS
Planning
Design
Prepress
Printing
Postpress

DELIVERY
Delivery of goods
Settling of accounts
Post sale services

SATISFIED CUSTOMER CLEAN ENVIRONMENT

PROCESSES SUPPORTING THE MAIN PROCESS

- Purchasing
- Measuring, analysis and improvement
- Document management
- General administration
- Marketing



The process diagram presented here and its inputs and outputs constitute the core of the environmental management system.

Thermal energy and electricity, water for human consumption, office supplies, paper accessories, household chemicals, batteries, light bulbs, vehicle fuel, air transport, administration service	COMPANY MANAGEMENT SALES BUILDING MANAGEMENT	Waste heat; wastewater; paper, packaging and mixed consumer waste; hazardous waste; exhaust gases
Electricity, office supplies	LAYOUT	Paper and mixed consumer waste
Electricity, printing plates and films, chemicals	PREPRESS	Metal waste, mixed consumer waste and hazardous waste
Electricity, moistening water, printing paper and ink, chemicals	PRINTING	Waste heat; paper, mixed consumer and hazardous waste; volatile organic compounds
Electricity; moistening water; varnishes, glue and other chemicals; fastening details; plastic film	POSTPRESS	Paper waste, mixed consumer waste and hazardous waste
Electricity, moistening water, packaging material	PACKAGING WAREHOUSE	Paper, packaging and mixed consumer waste
Transport service	DELIVERY TO CLIENT	Exhaust gases

Description of the environmental management system

The environmental management system (EMS) covers all of the activities and units of Ecoprint. Ecoprint manages the environmental impact of the activities not directly controlled by it, for instance delivery and subcontracting, through the selection of its business partners.

CEO Erika Ilisson is responsible for the company's environmental activities. The EMS corresponds to the requirements of the ISO 14001 standard and the EMAS Regulation. The system covers the stages of planning, execution, control and perfection, and the preparation of a public environmental report. The EMS is harmonised with the company's quality management system.

Ecoprint evaluates adherence to its environmental policy and the efficiency of its management system in the course of regular internal audits and management reviews, and the company's environmental goals and duties or the management system as a whole are updated whenever necessary. Indicators of environmental activities are collected all the time and the efficiency of activities is evaluated once a year, which results in the preparation of the annual environmental report. Ecoprint's environmental policy, management system handbook and environmental report are public and available to everyone.

Environmental and quality policy

Ecoprint's quality and environmental policy is based on the conviction that quality production and an environmentally friendly way of thinking guarantee the company's durable and long-term success.

We have set ourselves the following goals:

» our clients are satisfied:
» the quality of our products is high:
» the ecological footprint created by our activities is as small as possible;
» our employees are highly motivated;
» we are a reliable partner and good employer.

We do the following to achieve our goals:

» we always proceed from the requests and needs of our clients;
» we appreciate the feedback we receive from our clients and take it on board;
» we critically assess the quality of our products and the functionality of our processes;
» we train our employees and involve them in the development of the company;
» we invest in a better working environment;
» we invest in technology that is energy-efficient and harms the environment as little as possible;
» we prefer suppliers who stand out with their environmentally friendly activities;
» we constantly observe and improve our quality and environmental management systems and guarantee the resources they need to function efficiently;
» we adhere to the legislation and legal provisions of the Republic of Estonia that regulate the company's activities.

Environmental aspects and impact

The company considers the size, extent and probability of the environmental impact and the compliance of its activities with legal requirements when it assesses the significance of environmental aspects. The company's ecological and carbon footprints, which represent impact on the world's ecosystem, are assessed separately where possible.

Ecoprint's important environmental aspects with a positive impact are the Green Print as an environmentally friendly printing service (avoidance of petrochemicals in printing ink, use of environmentally friendly technology and renewable energy, use of certified or recycled raw materials), ownership of environmental certificates and labels and use of these on the company's products, preferring partners who care about the environment, recycling all waste and general environmentally friendly conduct of the company, which considerably reduces the environmental damage caused by printing services in comparison to usual practices. The Ecoprint team takes part in forest planting every year and supports the activities of environmental organisations.

The most important environmental aspects with a negative impact are use of raw material; generation of paper, metal and hazardous waste, use of electricity and thermal energy, use of water, generation of wastewater and logistics. The negative environmental impact of the company is apparent during the entire life cycle of the printing service:

- decrease in non-renewable natural resources;
- air, water and soil pollution;
- impact on climate change;
- decrease in the benefits of the ecosystem (food, water, timber, air cleaning, soil creation and pollination) in regions that are in human use and in areas influenced by them.

Environmental goals

The key environmental goals for Ecoprint in 2011 were related to reducing resource consumption. The analysis of the effectiveness of the environmental activities indicated that Ecoprint has by and large achieved its goals. Resource consumption has decreased both in terms of energy and water and the carbon footprint has also decreased. The percentage of certified printing paper has increased to 52% of total supplies; it has been made sure that the environmental activities of 10 percent of key business partners are being managed and effective, and the working environment in the production premises has been made healthier with installing a talcum collector. Ecoprint has invested in the efforts of environmental and charity organisations (MTÜ Ökomeedia and MTÜ Mondo) and has collaborated with several educational institutions and the Ministry of the Environment in order to explain to both school and university students and other stakeholders that environmentally friendly business is possible. In addition, Ecoprint was also featured in a short movie that introduces responsible business in the Baltic Sea region. For the second year in a row, Ecoprint was included in the Responsible Business Index drawn up by the Responsible Business Forum in Estonia and was ranked tenth in the overall rating and second in the category of small companies.

The major concern for the company is the increasing volume of waste paper, which is the reason why two goals set were not achieved – decrease in ecological footprint and reduction of the percentage of waste paper in raw material.

2011 ENVIRONMENTAL GOAL	STATE*	ACHIEVEMENT/RESULT
To reduce the ecological footprint by 5% per turnover unit	-	The ecological footprint has 22% in total; in terms of turnover by 8%. The growth was caused by increased paper consumption.
To reduce the carbon footprint by 5% per turnover unit	+	The carbon footprint has decreased 1% in total; in terms of turnover by 12%. There has been a decrease in all areas reported, except for the carriage of goods.
To reduce the consumption of electricity by 10% per turnover unit	+	The consumption has decreased 1% in total; in terms of turnover by 13%.
To reduce the consumption of gas by 10% per turnover unit	+	The consumption has decreased 4% in total; in terms of turnover by 15%.
To reduce the consumption of water by 5% per turnover unit	+	The consumption has decreased 23% in total; in terms of turnover by 32%.
To raise the percentage of using recycled raw materials with verified chain of custody by 5%	+	The FSC, PEFC and/or Nordic printing paper with the Swan Eco-label makes 52% of the total paper consumption, which is by 12% more than in 2010.
The environmental activities of 10% of business partners have been certified as effective.	+	10% of key business partners hold the certificate of FSC and/or PEFC chain of custody, the Nordic Swan Eco-label, the ISO 14001 environmental management system certificate or some other certificate on environmental activity.
To reduce the percentage of waste paper to 25% of the paper purchased	-	The percentage of waste paper has increased to 31% of the purchased raw materials and the usage of paper has grown.
To find out whether packaging waste can be sent to recycling as raw material instead of generating energy.	√	The waste handler will continue to handle packaging waste as waste fuel, because it is not rational to use it as raw material.
To reduce the amount of volatile talcum in production premises.	+	A talcum collector has been installed.
To collect a minimum of 75 points in the Responsible Business Index and to be among the top five in the category of small companies	+	Ecoprint got 78.3 points out of 100 in the Responsible Business Index and was ranked tenth in the overall rating and second in the category of small companies.
To support the activities of environmental organisations.	+	Supporting the Green Programme organised by MTÜ Ökomeedia and taking part in the training session.
Events for employees, their families and business partners	+	Forest planting day in Hirla, Lääne-Viru County on 13 May, attended by the employees and their families and two business partners.

Guided tours in the company	+	Six tours: Teachers of vocational schools visited the company on 7 April on the initiative of the Association of Estonian Printing Industry: Grade 2 from Tartu Veeriku School visited the production facilities on 7 October; Students of the environmental technology at the UT visited the production facilities on 14 October (production, materials, technologies); The ICT Department of the Tartu Vocational Education Centre visited Ecoprint on 7 November (design, prepress); The students of the UT Faculty of Economics visited Ecoprint on 14 November (green thinking, responsible business); The students of vocational schools and higher secondary schools of Võru County visited on 30 March in the framework of a competition of business plans, promoting environmentally friendly entrepreneurship.
Presentation at seminars and conferences	+	3 presentations and participations: Introducing eco-labels to companies at a SEI seminar in the Ministry of the Environment **www.eco-net.ee/static/ckfiles/files/Ecoprint_esitlus_Kesk-konnamargised_2011_est.pdf;** Analysis of Ecoprint's management strategies at the seminars of the UT Faculty of Economics from 29-30 September; Sharing environmental management practices at a seminar in the Ministry of the Environment on 3 October.
Media publications	+	2 articles Ecoprint Charmed Green Thinking Into Sales, 14 March, www.facebook.com/note.php?note_id=178479432198993; The Chairs Bearing the Names of the TOP 10 Responsible Companies at a café in Uganda, 5 December, **www.csr.ee/Blog-page-48/show-1/Vastutustundlike-Ettevotete-TOP-10-omanimelised-toolid-Uganda-kohvikus-id-66/**; 1 short movie presentation in a film introducing responsible and sustainable business by the Council of the Baltic Sea States (CBSS) vimeo.com/31290182

* meaning of symbols: + achieved; – not achieved; √ – partially achieved

Based on the results of 2011 and the action plans for 2012, we have set the following goals for the environmental aspects in different fields:

1. resource-efficiency:

» to continuously reduce the consumption of electricity per turnover unit;
» to continuously reduce the consumption of gas per turnover unit;
» to continuously reduce the consumption of water per turnover unit;
» to raise the percentage of using recycled raw paper from verified chain of custody to 60% of the total paper supply;
» to increase the share of chemicals and inks with eco-label or with an approval of environmental organisations to a minimum of 90% of the total supply of chemicals and inks, whereby by the end of the year, all consumer chemicals have been replaced by products having an eco-label;
» 15% of our main contractual partners are companies whose environmental activities are proven to be efficient (certificates of supply chain, implementation of environmental management systems and similar);

2. waste generation:

» to lower the volume of waste paper of paper consumption to at least to the level of 2010, i.e. to 29% (this includes waste paper generated in the office);
» to establish more efficient controls over waste generation;

3. to promote environmental activities:

» events for employees, their families and business partners;
» guided tours in the company's production unit, presentations at seminars and conferences, publications in media;
» to participate in research work (bachelor's and master's theses on responsible business, etc.);
» to participate in the Responsible Business Index and to get at least 80 points;

4. to monitor conformity to the requirements of existing standards and certificates.

Compliance of activities with legal requirements

The environmental legislation that regulates the activities of the printing company are the Waste Act, the Packaging Act, the Ambient Air Protection Act and, at the local level, the Waste Management Rules.

Reducing waste generation, promoting the collection of generated waste separately and recycling waste have been the environmental priorities of the printing company for years. Ecoprint performs the requirements stipulated in waste handling legislation. The main volatile organic compound emitted in the printing process is isopropanol, but the quantity of the used chemicals and emissions of volatile organics are considerably below the limits set forth in the Ambient Air Protection Act, which means that the company does not have to perform any additional obligations.

Ecoprint does not need any environmental permits in its operations, as electricity, thermal energy and drinking water supply, wastewater treatment, transport of goods and waste handling are outsourced, and the activities and work volume of the printing facility do not require the company to apply for environmental permits.

Methodology for assessment of the efficiency of environmental activities

Comparative presentation of absolute figures and ratios (per €1,000 turnover) by years and measuring the company's ecological and carbon footprints are used to evaluate the efficiency of Ecoprint's environmental activities.

Evaluation of activities is based on the field covered by the environmental management system. Ecoprint's inputs, outputs and the respective ecological and carbon footprints are first described by fields. Tables and graphs are then presented in the end of the report.

Ecological footprint methodology

The amount of land and sea area the human population needs to consume the various benefits of the ecosystem are evaluated to find the ecological footprint. These benefits are, for example, production of food and renewable raw materials, land under buildings and structures, but also the ability of natural biotic communities to remove the carbon dioxide that people emit in the course of energy consumption from ambient air.

The environmental footprint of a company is calculated by measuring the ecological load of its inputs and outputs during one year. The principle of shared responsibility must also be considered, as various companies and their clients use the same resources in the course of material circulation. The inputs and outputs the company needs in order to function, but which do not directly cover the use of material in the product that reaches the client, are included in the calculation of Ecoprint's ecological footprint. This means that the calculation of the footprint includes energy consumption, water usage, waste generation, transport and direct land use in the amounts for which we have the necessary ecological footprint coefficients. The list of sources used to find the coefficient is given in the end of the report.

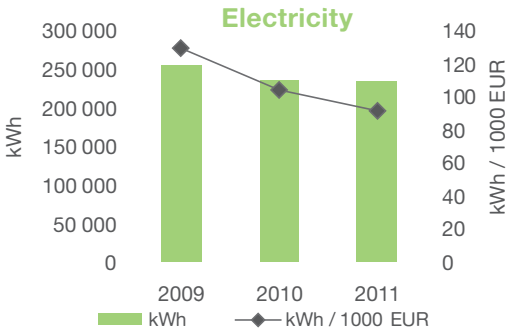
Carbon footprint methodology

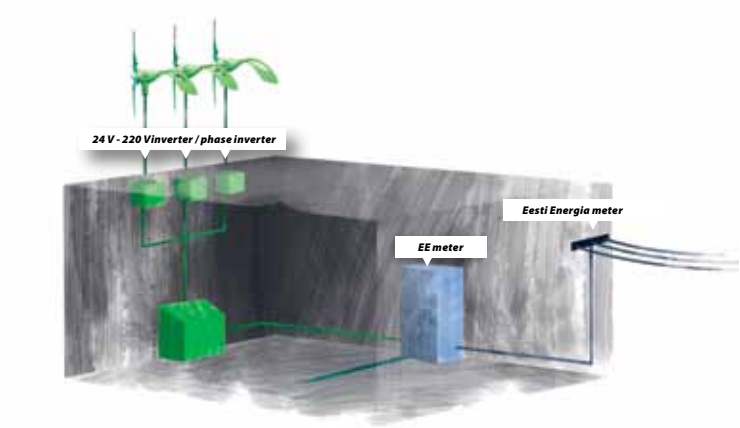
The carbon footprint indicates the amount of CO_2 and its equivalents emitted into air in connection with the company's operations in tonnes per year (t CO_2-eq). The use of electricity, thermal energy and transport is represented in the calculation of Ecoprint's carbon footprint. The life cycle-based indicators of all of the products and services consumed by Ecoprint cannot be presented due to the lack of the necessary coefficients. The list of sources used to find the coefficient is given in the end of the report.


FIELDS

Electricity

The consumption of electric energy has decreased 1% in total and 13% per turnover unit in 2011





	Consum-ption in 2011 (kWh)	Share	Ecological footprint (gha)	Carbon footprint (t CO_2-eq)
Wind energy	480	0,2%	79,1	298,6
Oil-shale electricity	232 570	99,8%		

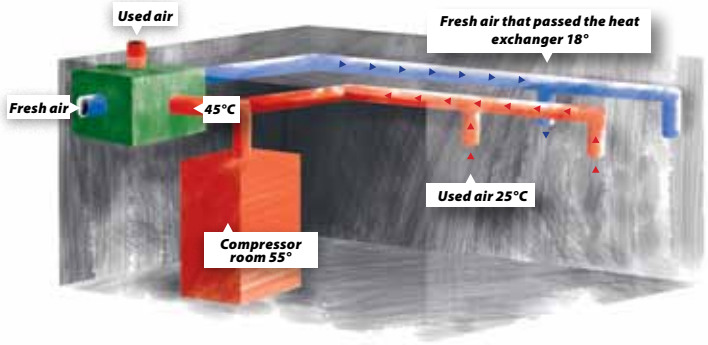
For its operation, Ecoprint mainly uses the oil shale electricity produced by Eesti Energia and a small amount of wind energy generated by the three Airdolphin wind turbines on the roof of the production building, which were designed for urban environment. The design of the blades of Airdolphin wind turbines was inspired by the wings of owls, which means they are as silent as possible.

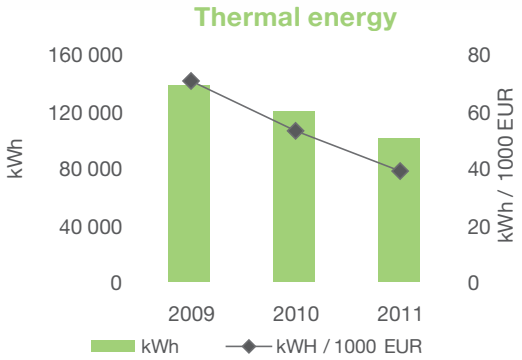
The amount of electricity, thermal energy and water consumption is divided between all lessees in the production building by proportion and this means that the measured resource consumption depends to some extent also on other users. Overall, the consumption of a resource is still determined by the needs of Ecoprint and the awareness and conduct of its employees. The company has persistently placed high priority on controlling the consumption of resources.

Thermal energy

Natural gas, which is received from the boiler house of Vahi Industrial Estate and the waste heat created in the course of the printing process and in the server room are used to heat the production facility of Ecoprint. The production and office premises of the printing company has separate ventilation systems, which are equipped with heat exchangers – the incoming fresh air is pre-heated with the waste heat of outgoing air. The separation of ventilation systems makes it possible to consider the different needs of production and office premises better – work in the printing facility is often done in two shifts and the working regime of the ventilation system is set according to the work schedule whilst in office premises, ventilation is automatically switched over to the saving regime outside working hours.

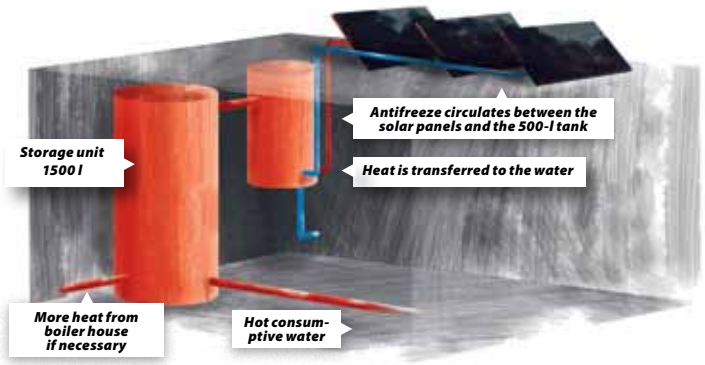
In 2011, the residual heat from printing equipment almost sufficed for heating the production premises; additional heating with gas amounted to 0.3% of the company's total gas consumption that is mainly used for heating offices and common rooms.





On the roof of the Ecoprint building, there are sun collectors with an area of 7.7 m2 for heating consumptive water. Cold water first runs through a water tank connected to the collector, which pre-heats it, and it then runs into the 1500-litre boiler. In the summer of 2011, solar energy covered all of the company's water heating needs.

The amount of energy produced by the sun collectors is not measured, which means it is not possible to calculate the exact share of renewable energy in the total energy consumption (electricity, heat) used in Ecoprint. Based on the measured data of electricity and gas consumption, the share of renewable energy accounted for 0.1% of all energy consumption in 2011.



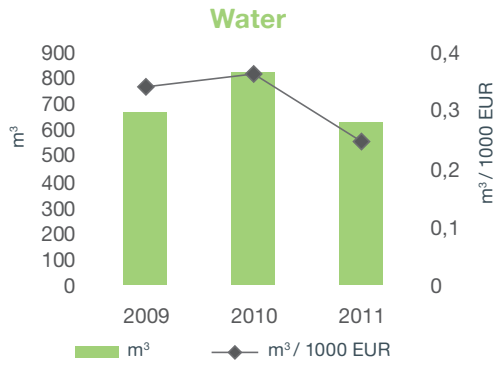
	Consum-ption in 2011 (kWh)	Ecological footprint (gha)	Carbon footprint (t CO_2-eq)
Thermal energy (natural gas)	114 780	7,0	26,6

The consumption of thermal energy from natural gas has decreased 4% in total and 15% per turnover unit in 2011

Water

	Consum-ption in 2011 (m^3)	Ecological footprint (gha)
Water from public water supply	630	0,05

The consumption of water has decreased 23% in total and 32% per turnover unit in 2011



Ecoprint uses water from the public water supply of Tartu City as well as the rainwater collected from the roof of the production facility in its operations. The generated domestic wastewater is directed into the city's sewerage system and its quantity is not separately measured. The washing water of the aqueous varnish section of the printing press is collected separately and sent to the handler of hazardous waste. The calculation of the ecological footprint from water consumption includes the supply of water from the public water supply system but does not cover wastewater treating for which a suitable coefficient of ecological footprint has not been established yet.

The level of air humidity in the printing facility must be 50% (plus / minus 5%) to guarantee that printing paper is as moist as required. Rainwater is collected from the 850 m^2 roof of the production facility and directed into a 5 m^3 tank. The automatic humidification system constantly measures the level of air humidity and starts or stops the injectors in the ceiling of the production premises. According to calculations, one tank of rainwater covers the water requirement of 12 days when working at full capacity. In periods of draught, the humidification system switches itself over from the rainwater system to water from the public water supply. In rainy periods, excess rainwater is directed into the drainage system. Use of water from the public water supply therefore depends on the amount of rainfall and the season. Ecoprint's forecast indicates that the use of rainwater reduces the consumption of water from the public water supply by 60% on average.

Material consumption and waste generation

The main inputs of printing activities are printing paper, printing ink, various chemicals and printing plates. Ecoprint uses printing ink that contain natural oils and resins instead of petrochemical products.

The company itself has stopped using printing films and does not mediate them to its customers either.

In supporting activities (office, administration) the company uses office paper and supplies, paper towels and toilet paper, light bulbs, batteries and household chemicals. If possible, Ecoprint prefers products that are certified or bear an eco-label.

Due to the increasing volume of orders and turnover, the company used slightly more inputs in production in 2011 than in the previous years, but the use of inputs per turnover unit decreased on the other hand in every category except for printing paper and this indicated that resources were used more efficiently. The increase in the consumption of printing paper is related to the growth in the share of packaging orders. Packages are made of a heavier cardboard and cutting waste is of non-standard shape and this has resulted in an increased quantity of purchased paper and higher volume of waste paper. However, the use of raw materials in supporting units decreased in comparison with the previous year.

The calculation of the ecological footprint from material consumption for both the main and supporting activities is based on the amount of waste generated, except office supplies, toilet paper and domestic chemicals which are measured on the basis of the amount of inputs.

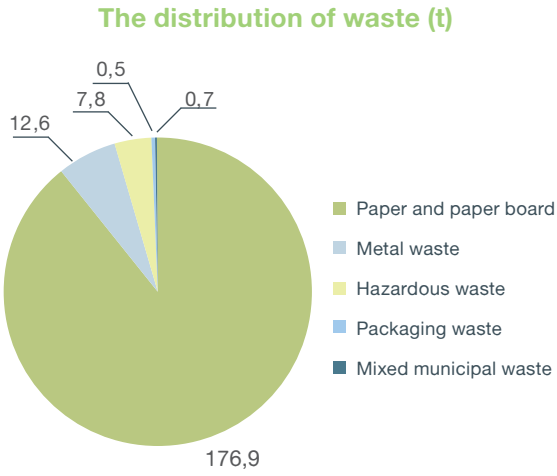
Input and ecological footprint

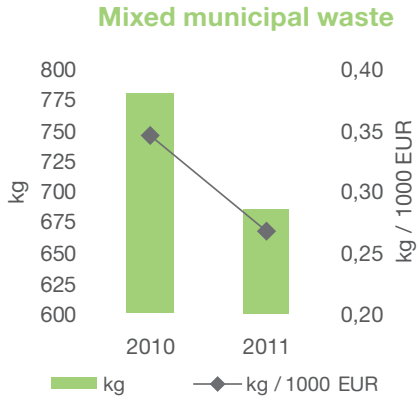
Printing paper 570 t
Office paper 30 pk
Printing plates 17 810 m^2
Chemicals 13 950 kg
Kontori- jm kaubad 0,8 gha

Waste and ecological footprint

Waste paper and cardboard 177 t, 433 gha
Metal waste 12 580 kg, 8,2 gha
Hazardous waste 7 790 kg
Plastic waste 500 kg, 1,1 gha
Mixed consumer waste 680 kg, 2,8 gha

Since 2010, Ecoprint has recycled all of the waste associated with the main and supporting activities of the printing facility (only paper, metal and hazardous waste were recycled before), and only the packages of cooked meals brought and disposed of by a catering company and measured by Ecoprint since 2010, reach the landfill (these account for 4% of the mixed municipal waste generated in Ecoprint). As the measuring method of mixed municipal was changed to weight-based in 2010, the data concerning the last two years are not directly comparable with the data of previous years.

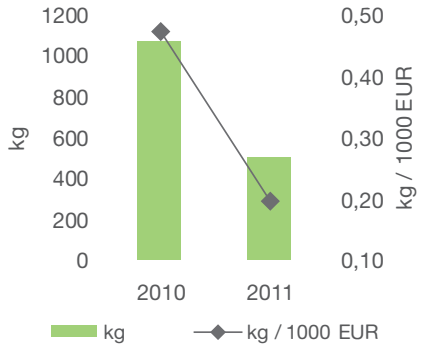




The generation of mixed municipal waste has decreased 12% in total and 22% per turnover unit in 2011

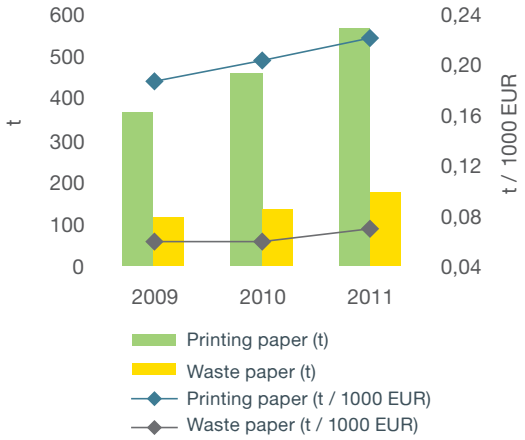
The waste handler uses the packaging, mixed municipal and hazardous waste generated in the production facility to produce fuel for the purpose of obtaining thermal energy. In 2011, the company tried to find a way for recovering packaging waste as raw material instead of generating energy, but did not succeed. As the company started to keep a tab on packaging waste from 2010, the diagram only covers the last two years.

Packaging waste



The generation of packaging waste has decreased 53% in total and 58% per turnover unit in 2011

Printing and waste paper

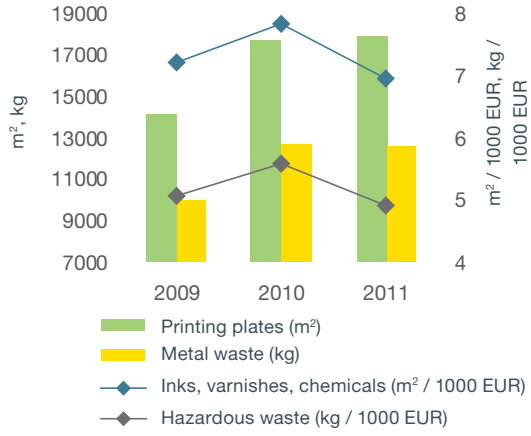


The use of printing paper has increased 23% in total and 9% per turnover unit in 2011; the generation of waste paper has also increased 31% in total and 16% per turnover unit

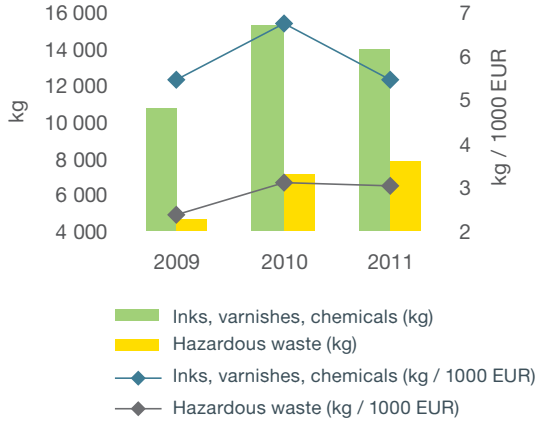
FSC and PEFC certified paper constituted 52% of the total amount of printing paper used by Ecoprint in 2011. The office used only FSC certified paper. The waste paper generated both in the printing shop and offices is collected separately and sent as material to a recovery facility. The largest share of waste generated in Ecoprint results from paper usage – in order to guarantee high quality, the company has to print trial sheets and cut printed matter into format. As referred to above, the volume of cutting waste has increased in 2011 due to the higher share of cardboard products. The generation of waste paper causes the strongest environmental impact in Ecoprint and is the largest component in calculating its ecological footprint.

Used printing plates are sold to buyers who put them in metal recycling. Printing plates and corresponding metal waste are accounted for both in terms of their size and weight. The amount of metal waste depends mainly on the type of printed materials: e.g. less printing plates are required for advertising materials than for books, where every page needs a separate plate.

Printing plates and metal waste



Inks, varnishes, chemicals and hazardous waste



The use of printing plates (m2) has increased in 2011 by 1% in total, but has decreased by 11% per turnover unit; the generation of metal waste has on the other hand stayed at the level of the previous year; waste generation has dropped by 12% per turnover unit

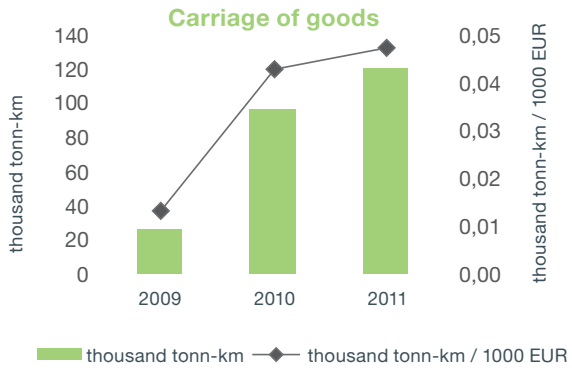
The use of inks, varnishes and chemicals has decreased 9% in total and even by 19% per turnover unit; the generation of hazardous waste has on the other hand increased by a total of 11%, but decreased by 2% per turnover unit

All hazardous waste, which also includes waste generated by natural printing ink, and packaging and cleaning rags polluted with hazardous waste, solvents used for cleaning the equipment, used developing solvents and the washing water of the aqueous varnish section of printing press are sent to a licensed waste handler for thermal energy production. The metal packaging left after burning is handed over to a metal waste handler. The ecological footprint of hazardous waste cannot be calculated, as there is no coefficient. The quantities of printing inks, varnishes and chemicals have been added up on the diagram below on the assumption that a litre of chemicals weighs 1 kg.

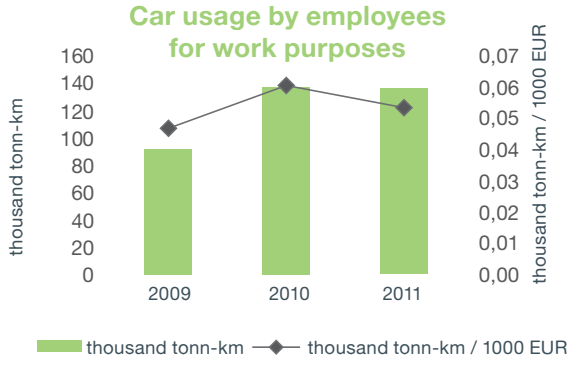
Transport

	Quantity	Ecological footprint (gha)	Carbon footprint (t CO_2-eq)
Carriage of goods (tonne-km)	121110	8,5	15,7
Car usage by employees for business purposes (car-km)	136220	12,1	26,1
Flight hours (h)	6	0,3	0,7

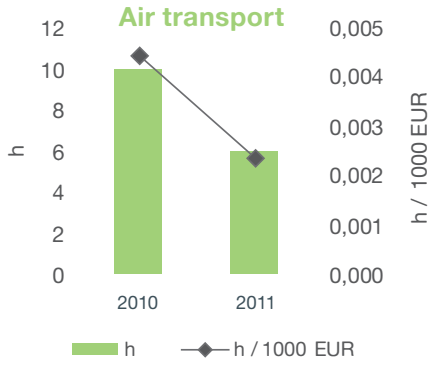
Ecoprint's use of transport divides in three: carriage of goods, use of cars for work purposes and carriage by air for business trips abroad. All carriage of goods is ordered from partners and the company's vehicles are only used for the benefit of employees. Ecoprint keeps exact account of the amount of goods transported and the kilometres travelled. Only land transport has been used so far. The scope of the carriage of goods has increased in the recent years due to the growing share of the Scandinavian markets and exports volumes. In 2011, the use of passenger cars decreased slightly in comparison with the previous year. The number of flight hours decreased as well.



The volume of carriage of goods has increased 25% in total and 10% per turnover unit in 2011



The volume of work-related use of passenger cars has decreased 1% in total and 12% per turnover unit in 2011



The amount of flight hours in connection with business trips abroad has decreased 40% in total and 47% per turnover unit in 2011

Land use

Ecoprint rents premises at Vahi Industrial Estate and shares the production building with other companies. According to the division of premises, the area of the site used by Ecoprint, which is 4,280 m^2. Direct land use causes an ecological footprint of 1.1 gha.

Main indicators of environmental activities

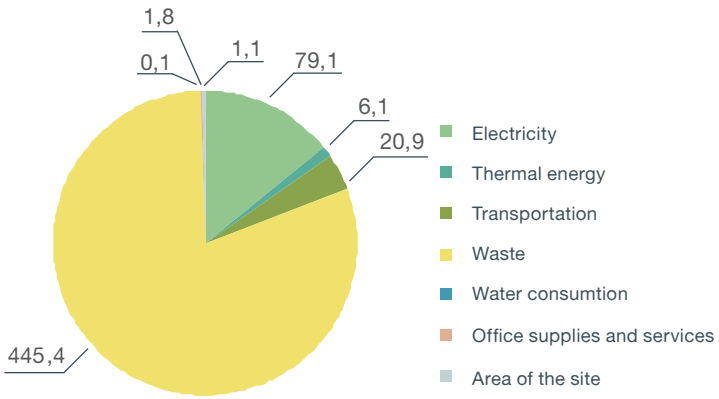
INPUTS AND OUTPUTS			AMOUNT CONSUMED			AMOUNT CONSUMED PER €1,000 OF TURNOVER		
Category		unit	2009	2010	2011	2009	2010	2011
ELECTRICITY								
	Total	kWh	254 260	236 000	233 050	129,6	104,2	91,0
	Electricity produced from oil shale	kWh	253 880	235 620	232 570	129,4	104,1	90,8
	Energy produced with Ecoprint's wind turbines	kWh	380	380	480	0,19	0,17	0,19
THERMAL ENERGY								
	Total	kWh	137 710	119 570	114 780	70,19	52,81	44,83
	Energy produced from natural gas	kWh	137 710	119 570	114 780	70,19	52,81	44,83
	Solar energy	kWh	no calculation					
SHARE OF RENEWABLE ENERGY ON THE BASIS OF EXISTING MEASUREMENT DATA			0,1%	0,1%	0,1%			
WATER								
	Water from public water supply	m^3	660	820	630	0,34	0,36	0,25
	Rainwater collected from roof	m^3	no calculation					
TRANSPORT								
	Carriage of goods	tonne-km	25 830	96 970	121 110	13,17	42,83	47,30
	Car use for work-related purposes	car-km	91 830	137 040	136 220	46,80	60,53	53,20

	Air transport	h	no calculation	10	6		0,00	0,00
RAW MATERIAL								
	Printing paper	t	370	460	570	0,19	0,20	0,22
	Office paper	pack	60	31	30	0,03	0,01	0,01
	Printing plates	m^2	14 150	17 680	17 810	7,21	7,81	6,95
	Print film	m	610	670	0	0,31	0,30	0,00
	Ink	kg	2 700	3 620	3 990	1,37	1,60	1,56
	Dispersion varnish	kg	2 580	3 910	3 960	1,31	1,73	1,54
	Chemicals	l	5 420	7 720	6 000	2,76	3,41	2,34
WASTE (ALL RECYCLED)								
	Paper waste	t	116	135	177	0,06	0,06	0,07
	Packaging waste	kg	no calculation	1 070	500		0,47	0,20
	Metal waste	kg	9 940	12 620	12 580	5,07	5,57	4,91
	Hazardous waste	kg	4 620	7 050	7 790	2,35	3,11	3,04
	Mixed consumer waste	kg	13 860	780	680	7,06	0,34	0,27
LAND USE								
	Size of site used by Ecoprint	m^2	4 280	4 280	4 280	2,18	1,89	1,67
TURNOVER		**mEUR**	**1,962**	**2,264**	**2,560**			

Summarised results of ecological footprint

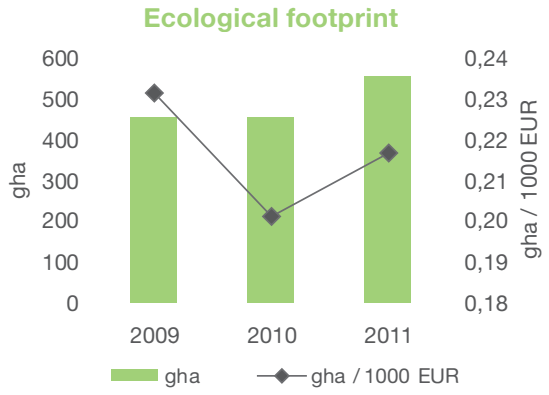
The activities of Ecoprint in 2011 caused a total ecological footprint of 555 gha, which means an increase of 22% as compared to 2010 and an increase of 8% per turnover unit. This results from increased usage of paper due to the growing share of packaging production in the operations of the printing shop. Thanks to more economical consumption, the indicators concerning electricity and thermal energy, water consumption, using passenger cars for business purposes, carriage by air for business trips abroad, office supplies and packaging and mixed municipal waste have decreased in the calculation of the ecological footprint.

Ecological footprint (gha)



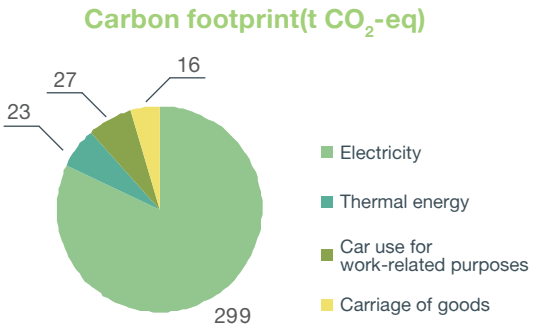
The ecological footprint of Ecoprint in 2011 was 555 global hectares. The share of waste generation is the largest

CATEGORY	2009		2010		2011	
	gha	%	gha	%	gha	%
Electricity	86,6	19,1%	80,17	17,6%	79,1	14,2%
Thermal energy	8,4	1,9%	7,33	1,6%	7,0	1,3%
Water	0,05	0,0%	0,07	0,0%	0,1	0,0%
Car use for work-related purposes	10,1	2,2%	12,66	2,8%	12,1	2,2%
Carriage of goods	1,8	0,4%	6,79	1,5%	8,5	1,5%
Air transport	-		0,56	0,1%	0,3	0,1%
Office supplies	-		0,67	0,1%	0,8	0,1%
Services	-		1,05	0,2%	1,1	0,2%
Waste	346,0	76,2%	344,59	75,7%	445,4	80,2%
Land under buildings	1,1	0,2%	1,08	0,2%	1,1	0,2%
Total	**454**	**100%**	**455**	**100%**	**555**	**100%**
Total/turnover (gha/€1,000)	0,231		0,201		0,217	



The ecological footprint of Ecoprint has grown 22% in total and 8% per turnover unit in 2011

Summarised results of carbon footprint

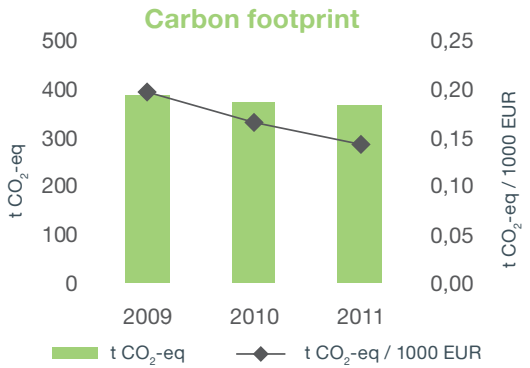


The carbon footprint of Ecoprint was 368 t CO_2 eq in 2011.Consumption of electricity accounted for the majority of it

Ecoprint's operations in 2011 created a carbon footprint of 368 t CO_2-eq, which is by 1% smaller than in 2010 and as much as by 12% smaller when calculated per turnover. The decrease results from more economical consumption of electricity and thermal energy and lower volume of business trips and flights. However, the carbon footprint from the carriage of goods has increased during the year. Ecoprint should plant 103 ha of forest to remove all of the carbon dioxide created by Ecoprint in 2011. During the forest planting day on 13 May 2011 Ecoprint's staff, their families and business partners planted 25,000 trees or one hectare of forest. In 2012, the forest planting event will be organised in May in cooperation with the State Forest Management Centre.

CATEGORY	2009		2010		2011	
	tCO_2-eq	%	tCO_2-eq	%	tCO_2-eq	%
Electricity	326	84%	303	81%	299	81%
Thermal energy	32	8%	28	7%	27	7%
Car use for work-related purposes	25	6%	29	8%	27	7%
Carriage of goods	3	1%	13	3%	16	4%
Total	**386**	**100%**	**372**	**100%**	**368**	**100%**
Total/turnover (gha/€1,000)	0,197		0,164		0,144	

The carbon footprint of Ecoprint has decreased 1% in total and 12% per turnover unit in 2011



Summary

Ecoprint and its predecessor AS Triip prepare an environmental report for the tenth year in a row. The company has evaluated the ecological footprint of its operations since the preparation of the first report. Measuring the carbon footprint and presentation of resource-efficiency and waste generation indicators also for the company's turnover, which gives better information about the efficiency of environmental activities, have been added in recent years.

The business operations of Ecoprint were continuously expanded in 2011: export volumes increased and the turnover grew by 13%. The balance between product groups also changed somewhat in comparison with the previous year. This brought along higher consumption of paper and bigger ecological footprint, but at the same time the company's carbon footprint, i.e. the amount of emissions into air from its consumption of energy decreased. All indicators of resource consumption and waste generation calculated per turnover decreased during the year with the exception of the use of printing paper, generation of waste paper and carriage of goods.

Ecoprint will continue its targeted efforts to increase its positive environmental impact by increasing the environmental awareness of its customers, business partners and staff, and reduce its resource consumption and waste generation both through optimising its production process and raising the awareness of its employees and shaping their habits.

Some facts about printing industry

Printing is considered to be one of the industries with the highest load on the environment. Taking this opinion into consideration, let us see how the environmental impact of printing industry compares to other business sectors. Below, please find the indicators of carbon dioxide emission based on the input and output ratios and energy consumption between business sectors, i.e. by taking into account the emission rates of the products used as inputs by a respective business sector and by using the data published by Statistics Estonia.

As we can see, paper production and printing industry hold a middle position in terms of CO_2 emission generated per product base price (kg CO_2/EEK) based on the consumption of energy in Estonian business sectors. The production in energy sector is the most carbon dioxide intensive, followed by transport services, timber and mining industries. The carbon dioxide intensity indicator of paper production and printing industry is comparable to agriculture, chemical industry and food industry. Lower emissions per product price are generated by different services, construction works and textile and leather industry.

The studies of the environmental load of offset printing life-cycle show that the impacts of using chemicals and paper are the strongest and are expressed by toxicity and by the impact of energy and water consumption both during the production and printing processes (Larsen et al 2009). These impacts are controlled by selecting more environmentally friendly raw materials and production processes, which is evidenced by companies' participation in certified chains of custody, using eco-labelled raw materials and implementing environment management systems, and eco-labelling its production as a result of this. A good example here is the use of the Nordic Swan eco-label, which is one of the most renown. In the Nordic market, more than 400 printing companies have a Swan label (Nordic Ecolabel, 2012). Along with this, the criteria for the European Union ecolabel for printing industry are currently being worked out. Over 2,000 paper products with an EU ecolabel have been registered by now.

The carbon dioxide intensity of Estonian business sectors in relation to base price based on the 2005 data on input and output ratios and energy consumption:

Business sector	kg CO_2/EEK
Energy sector	0,188
Road transport	0,116
Production of goods from non-metal minerals	0,113
Air transport	0,083
Timber industry	0,072
Mining industry	0,072
Agricultural and fishing sector	0,057
Chemical industry	0,056
Paper production and printing industry	0,050
Food industry	0,046
Construction	0,039
Waterway transport	0,038
Other unclassified industry	0,035
Business and public services sector	0,033
Textile and leather industry	0,033
Machinery	0,009
Production of transport means	0,008
Metal industry	0,008

» In relation to the carbon dioxide intensity of energy consumption, printing industry holds a middle position among Estonia's business sectors.
» Paper and printed products, Ecoprint's among them, are the most frequent holders of the Nordic Swan label.
» The major environmental impacts of offset printing result from the use of chemicals and paper. Ecoprint mitigates this impact by using inks that contain natural oils and resins instead of petrochemicals and by preferring recycled paper or paper from a verified chain of custody as raw material.

References

Allen J., Browne M.2010. Road freight transport and sustainability in Britain 1984–2007. Transport Studies Department, University of Westminster, London, 108 pp.

Chambers N., Simmons C., Wackernagel M. 2004. Sharing nature's interest: Ecological footprints as an indicator of sustainability. Earthscan, 199 pp.

CORINE 2006. CORINE Land Cover. Estonian Land Cover Database.

EPA 2005. Emission Facts. Average carbon dioxide emissions resulting from gasoline and diesel fuel. United States Environmental Protection Agency, Office of Transportation and Air Quality, 3 pp.

GEMIS 4.6. Global Emission Model for Integrated Systems. Institute for Applied Ecology (software, HYPERLINK "http://www.oeko.de" www.oeko.de).

GFN 2008. National Footprint Accounts 2008 edition: Estonia 2005. Global Footprint Network (HYPERLINK "http://www.footprintnetwork.org" www.footprintnetwork.org), MS Excel worksheet.

GFN 2010. Calculation Methodology for the National Footprint Accounts, 2010 Edition. Global Footprint Network, 17 pp.(HYPERLINK "http://www.footprintnetwork.org" www.footprintnetwork.org).

Larsen H.F., Hansen M.S., Hauschild M. 2009. Life cycle assessment of offset printed material with EDIP97: how important are emissions of chemicals? Journal of Cleaner Production 17:115–128.

Nilsson K. 2004. The carbon dioxide emission factor for combustion of Swedish peat. IVL Swedish Environmental Research Institute, 24 pp.

Nordic Ecolabel 2012. Portal for paper, pulp, and printing HYPERLINK "http://(www.nordic-ecolabel.org/portals/paper/printing-houses/" (www.nordic-ecolabel.org/portals/paper/printing-houses).

Statistics Estonia 2010. The symmetrical table of inputs and outputs of national economy based on 2005 (HYPERLINK "http://www.stat.ee" www.stat.ee).

Statistics Estonia 2012. Sectoral databases (HYPERLINK "http://www.stat.ee" www.stat.ee).

Register of Roads 2008. The Road Administration (HYPERLINK "http://teeregister.riik.ee" teeregister.riik.ee).

Tallinn University of Technology 2010. The mileage of vehicle fleet in Estonia in 2009. Interim report. Tallinn University of Technology, Road Institute, 108 pp. (HYPERLINK "http://www.mnt.ee" www.mnt.ee).

The Estonian Road Administration 2010. The 2009 Yearbook. The Road Administration, 70 pp. (www.mnt.ee).

Thomas C., Tennant T., Rolls J. 2000. The GHG Indicator: UNEP guidelines for calculating greenhouse gas emissions for businesses and non-commercial organisations. United Nations Environment Programme, 61 pp.

Environmental recognition

AASTA KESKKONNATEGIJA AUHIND
2009

Environmental Award Competition
Ecoprint has won the Environmental Award given by the Ministry of Environment to the most environmentally friendly company in 2007, 2008 and 2009 in the fields of environmental management, environmental management systems and environmentally friendly printing services, and environmentally friendly production processes.

Further information
www.envir.ee/1100745

Eco-Management and Audit Scheme (EMAS) 2010
The European Commission gave this environmental aware to Ecoprint in 2010 for being the most resource-efficient company in the category of small organisations.

Further information
ec.europa.eu/environment/emas/emasawards/index.htm

European Business Awards for the Environment

European economy award in the field of environment (EBEA) In 2008 Ecoprint won a position among the final three at the EBEA competition organised by the European Commission for its efficient environmental and quality management.

Further information
ec.europa.eu/environment/awards/index.html

vastutustundlik ettevõte 2011

In 2011, the second consecutive year, Ecoprint was awarded with the mark of the Responsible Business, collecting 78,3 points from maximum 100 points in CSR-index, and achieving the tenth place among of all the Estonian companies, participating in this contest, and the second place among small businesses.

Further information
www.csr.ee

Product contains FSC® Mix Credit certified paper Arctic Volume White.